



QUICKGUIDE

version 0.2 alpha

Welcome

As soon as I drafted out the initial concept of sIBLstage, it was clear that to work out efficiently it would need a set of profiled lights. The choice upgrading the old lightsmithedit to harvest the system was a non-brainer. Not only would it shave of some development time, but it also would be an ideal enhancement for a general purpose library of profiled lights in the cg realm.

(Having spectral information is currently an overkill, but in future if spectral rendering becomes widespread, having a library of profiled lights might be beneficiary.

The system is based on the old sIBL/lightsmith format developed by Christian Bauer, Christian Bloch, Volker Heisterberg, Thomas Mansencal and Gwynne Reddick

Which at that time offered a one click solution for image based lighting. (Although a lot of the things have become outdated) This was done for several reasons, mostly because it provided a lot of the needed properties and second because development on that regard might be profitable for a modern version of the file format, if anyone wants to work again on its development.

NEEDED HARDWARE

For full usage of the program you need a FTDIchip based USB to DMX controller. This are very affordable and available in most online shops. An artnet based system is in the plans, if there is enough commercial interest in this system

Second it is recommended to invest in a HDMI to USB dongle, which does output a webcam feed sIBLstage and sIBLlight need for profiling the lights whitepoints based on the camera feed, or as a helper to position lights based on a mirror ball

THATS ALSO THE REASON BOTH PROGRAMS ASK FOR WEBCAM ACCESS

sIBLlight is free

Unlike sIBLstage I don't see a reason to finance such an open system. Besides the concept is based on other peoples free work.

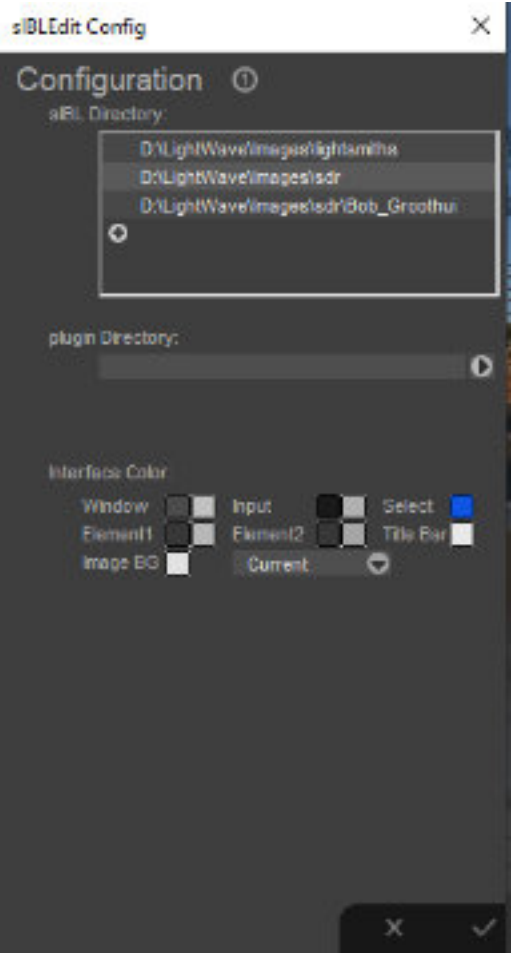
This is an alpha release. Use it at your own risk

On first launch

On first launch you are presented with the config panel where you have to define at least one sIBLlight (or Lightsmith) directory. After hitting the Check Button on the lower right side of the panel (x is for cancel) you are presented with main interface

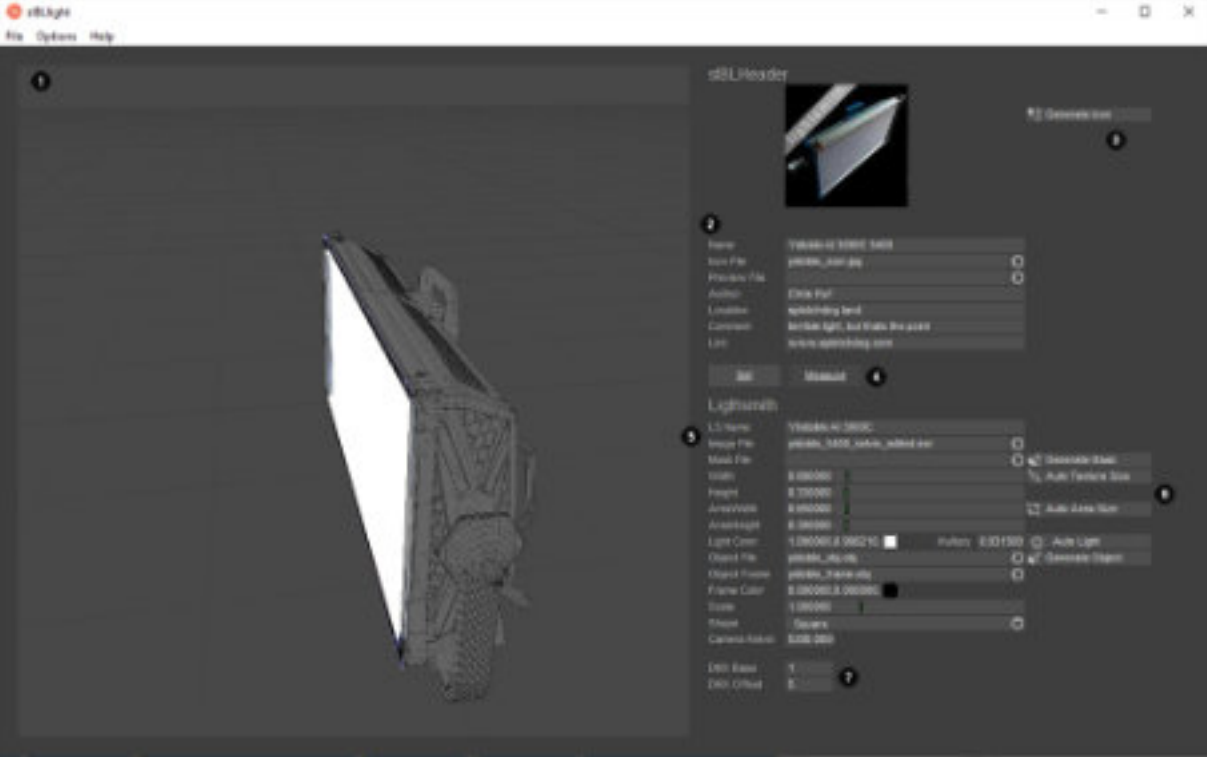
The plugin directory is a leftover of sIBLedit, and might be removed or gain a different functionality

The custom interface color should still be working, but I haven't tested it



The main interface

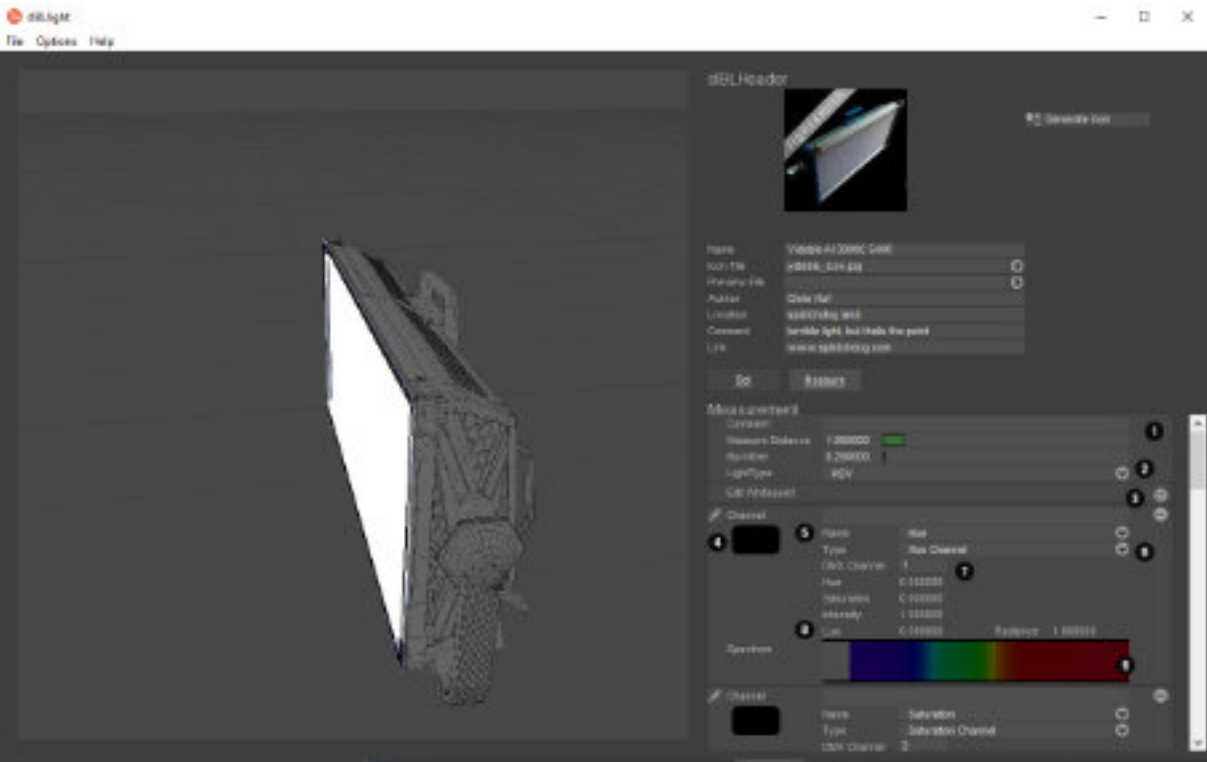
Upon launch you are presented with the old lightsmith interface. For old users, at first glance there is not that much new to see comparing to the old version



- 1 Main View**
Main 3D view, where you can inspect your sIBLfile
- 2 sIBL Header definitions**
These are the standard sIBL header definitions (new for old sIBL users: The preview file selector has been added)
- 3 Switch between standard lightsmith and measured values**
This is new. Most of the additional sIBL extensions can be found under the measured tab.
- 4 Standard Lightsmith defintions**
These will be outlined later in the document, and are mainly for 3D usage. New for existing LS users is the kelvin tag wich allows you to store which kelvin you shot the hdri for the lightsmith
- 5 Auto Generate Values**
For quickly setting up a Lightsmith file. Can be placeholders for further editing in other applications
- 6 DMX Base / DMX Offset**
The default / first DMX Channel of the used light. Offset is still not used, but the idea is that sIBLstage reserves this amount of channels to avoid conflict with the next added light.

The Measure Tab

This is where most of the new functionality happens. This tab is mainly about measured values of the light. Depending on which type of channel is selected the display might differ



- 1

Measurement Header

Comment: Might hold any information about the measurement like device, date of measurement etc.
Measurement Distance is the distance between the light and the measurement device.
Burntime is the time the light was on before measurement in minutes
- 2

Light Type

Not used yet. But plan is to offer this information to the browser for clarity
- 3

Edit Whitepoint

Hitting the window button will allow you to setup whitepoints for your lights. Or in other words, the color the light desaturates to **sIBLstage needs at least one whitepoint to work properly**
- 4

Edit / Color Button

Pressing one of those will open the Calibration Dialog, where you can set all parameters of each channel
- 5

Name

The channel name, like red blue green, hue, kelvin etc. You can use a custom name, or choose from one of the presets
- 6

Channel Type

To define this correctly is a must. Here you define what type of DMX channel you have.
Kelvin is for mono / bicolor lights
Color Channel is for RGB controlled lights
Hue, Saturation, Intensity Channel is for HSV controlled lights
Control is for Additional behavior control channels of your light
- 7

DMX Channel

This is the channel wich is added to the base. Lets say your base address is 24, the first channel will be 0 the next 1 etc, Channels do not have to be in order.
- IF A CHANNEL IS SET TO A NEGATIVE VALUE, IT WILL BE IGNORED IN sIBLSTAGE.
- This is important if you want to profile your light beyond DMX usage: A HSV controlled light might still have measurement of the red/green/blue channels for future usage: Just provide a dmx value lower than 0 to be ignored by sIBLstage
- 8

Lux / Radiance

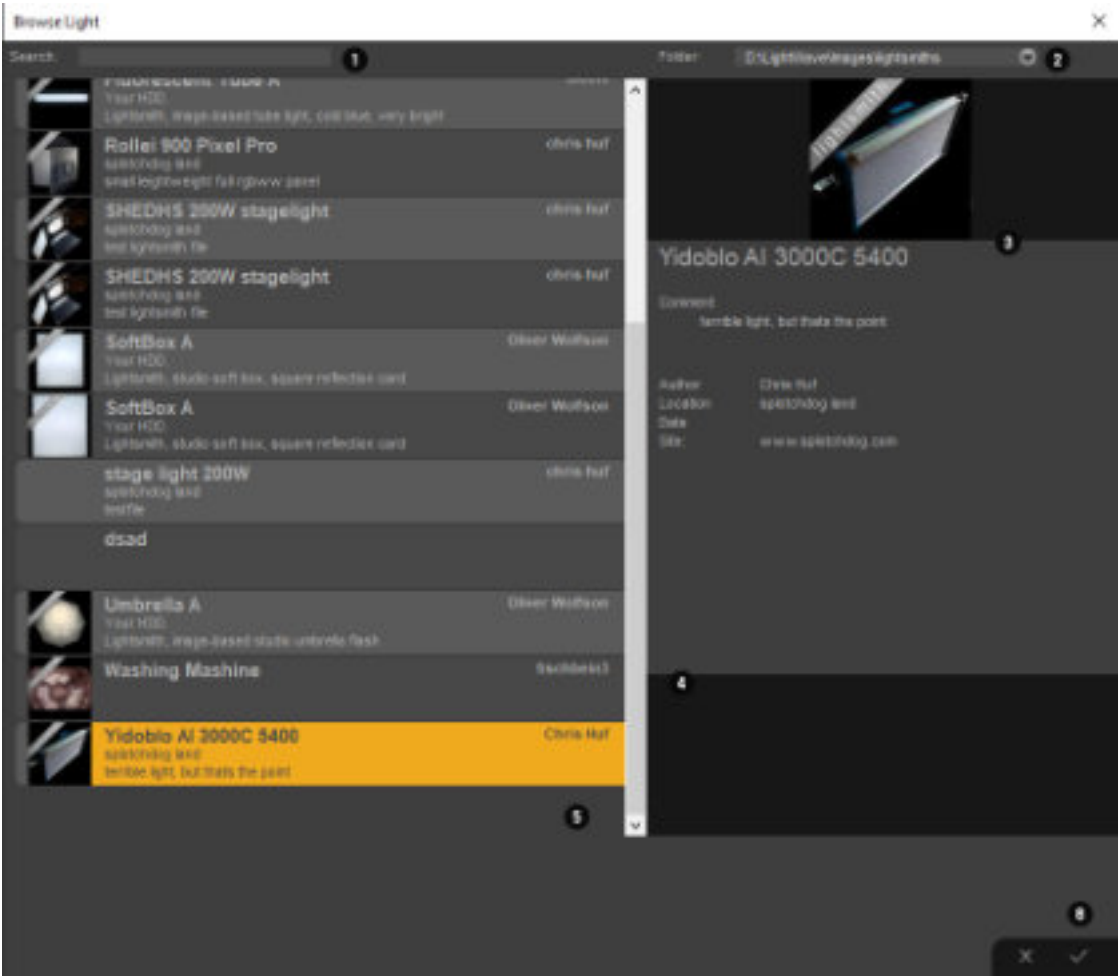
Despite using radiance values to store in the sIBL file. The measured lux value is also kept, for future improvment
- 9

Spectrum Display

If a channel contains spectral data, these will be displayed here

The sIBL browser

Not yet implemented in sIBLlight, its a pretty much a non-brainer to do in future, due to the modularity in code. For this reason I keep the sIBLstage documentation about it here in place



- 1

Search let you search for a light
- 2

Folder preset selection

If you added multiple folders in the config menu, you can quickly switch between them
- 3

Main Information

Here you can see some of the information provided by the sIBL file
- 4

Additional files

If there are other images assigned to the sIBL file (like a preview) these will be displayed here
- 5

Main View

Select a light. in the view, to display details / import
- 6

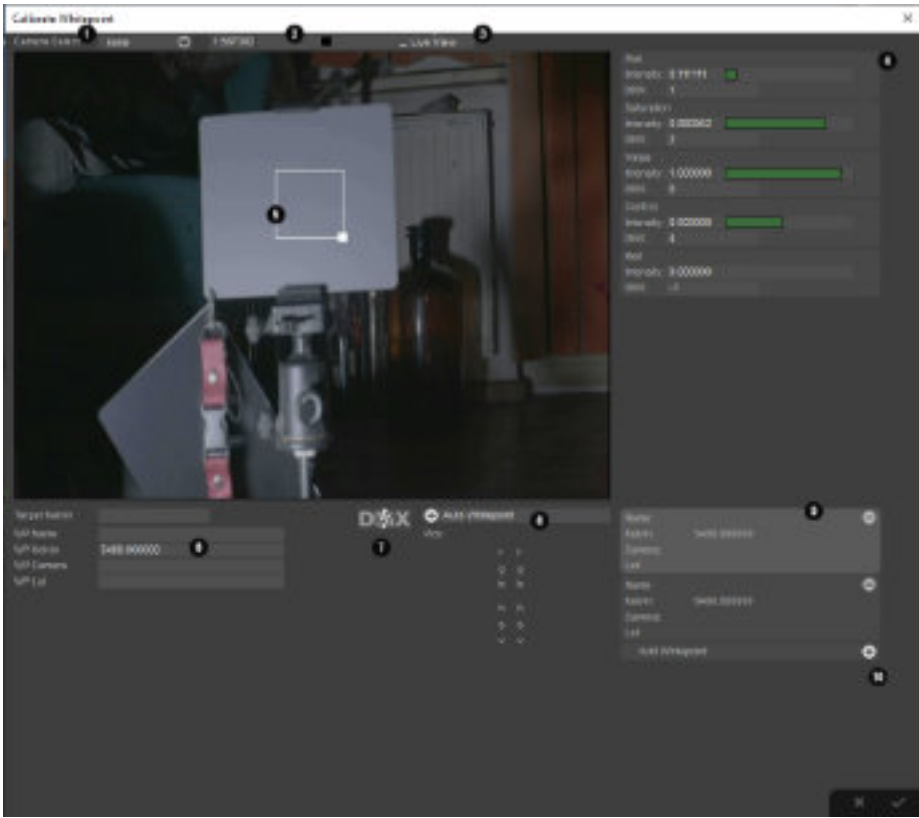
Ok / Cancel

Here you can decide if you either want to import a light or cancel the operation

The Whitepoint Dialog

sIBLstage "overwrites" the internal color engine of your light. Or at least it tries to. This means you need to have at least one whitepoint in your light definition for the program to work. This CAN be the intended whitepoint of your light, or a self defined one..
The benefits is, that you can correlate the light to the cameras whitepoint without the need of a spectrometer and hoping that 5200 kelvin of your light correlates to the 5200 kelvin of your camera.
This by filming a Grey reference object illuminated by the light. And manually tweaking the settings until the saturation is 0

The tool uses the webcam input feed, which most of the hdmi to usb converters uses. For that reason you have to grant sIBLstage and sIBLlight access to the webcam.



- 1

Camera Select
Select the camera (should be recognized as a webcam in windows)
- 2

Exposure
Sets the exposure of the cam input if supported
- 3

Live View
Turns on Live View
- 4

DMX Controls
Once you add a whitepoint you can control how much of each available channel adds to the it. Eg just the white LED, or add a bit of green and red, to compensate for that blue tint of that cheap LED lights.
- 5

Main View
Here you can define the area which is used for evaluating the color. This has not to be neutral grey and should not clip
- 6

Whitepoint declarations
Here you should at least enter the WP kelvin value, the rest is for your own personal preference. (If you got multiple cameras you want to calibrate to, or different luts are applied to that camera.
- 7

DMX On/ Off
Turns DMX on or off. Please be aware that the panels use the settings you entered in your main program
- 8

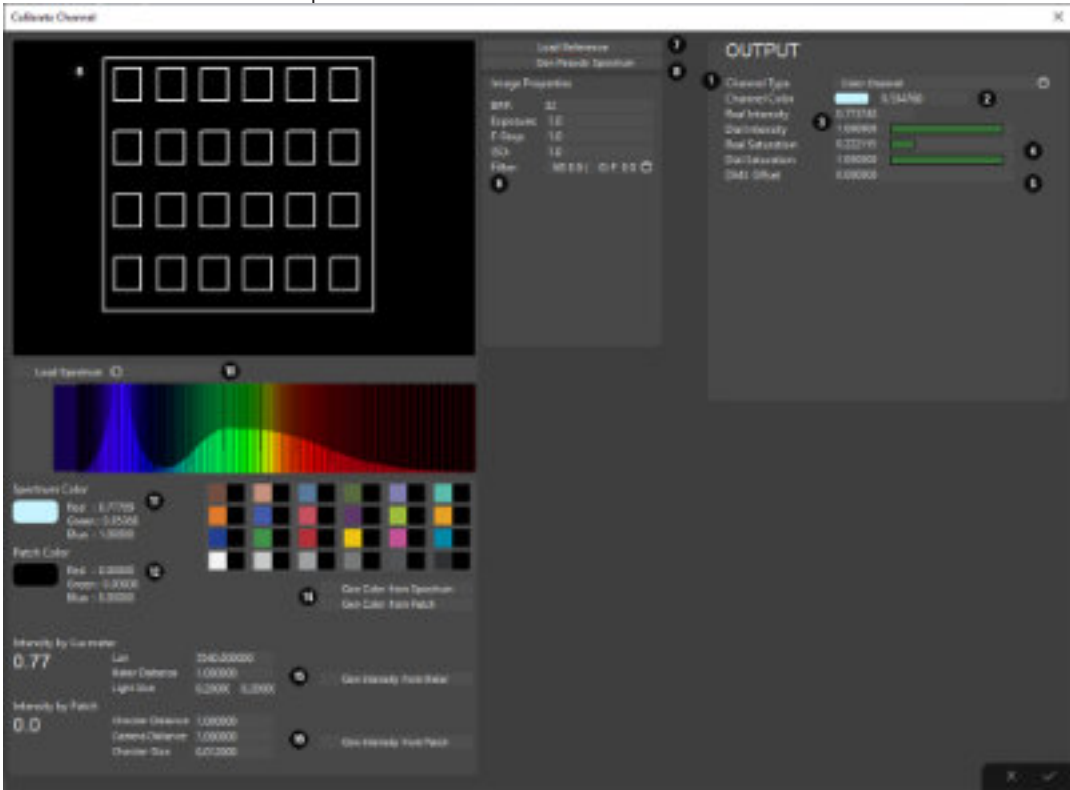
Auto Whitepoint
Currently unsupported.
- 9

RGB/HSV readout
Displays the average value of the measured patch in your live view. Basically you try to lower the s in the hue saturation value section to 0 as close as possible
- 10

Whitepoint List
Here you can add whitepoint definitions, by hitting the plus button. You can use this to select different whitepoints you have already defined.

The Calibration Dialog

This is the place where you can edit the type and output of each channel.
This panel might be overwhelming at first, but whats important are the few values on the right under OUTPUT
Most of the values on the left are for evaluating / measuring lights on basis of a spectrometer or a photo of a xrite color checker illuminated by the light. (As for the later it is experimental and subject to changes)
A lot of the settings are provided so you don't have to reprofile a light if some additional functionality will be added in future.
There is a lot of work to be done in this panel.



- 1

Channel Type
You have the option between Kelvin for Mono/ Bicolor Lights, Color Channel for RGBW etc lights. Hue Saturation and intensity channels for HSV controlled lights and Control Channels, for Channels which controls the behavior of a light
- 2

Channel Color
This will be the color the light. Essential for Color and Kelvin channels.
- 3

Real Intensity / Dial Intensity
Real intensity is the measured value, while Dial is what intensity you dialed in the light. Currently I do not support multi dial definitions, so keep the DIAL value at one
- 4

Real Saturation / Dial Saturation
Same as for real / dial intensity. It is recommended to keep these values untouched for now. sIBLstage uses this value to decide if a channel is used for color evaluation or not.
- 5

DMX Offset
Default offset. This is essential for control channels.
(Like one of my lights wich needs a default value of 0.5 to be in hsv mode)
- 6

Photo view
Displays the photo loaded. You can adjust the corner handles to match the xrite color checker
- 7

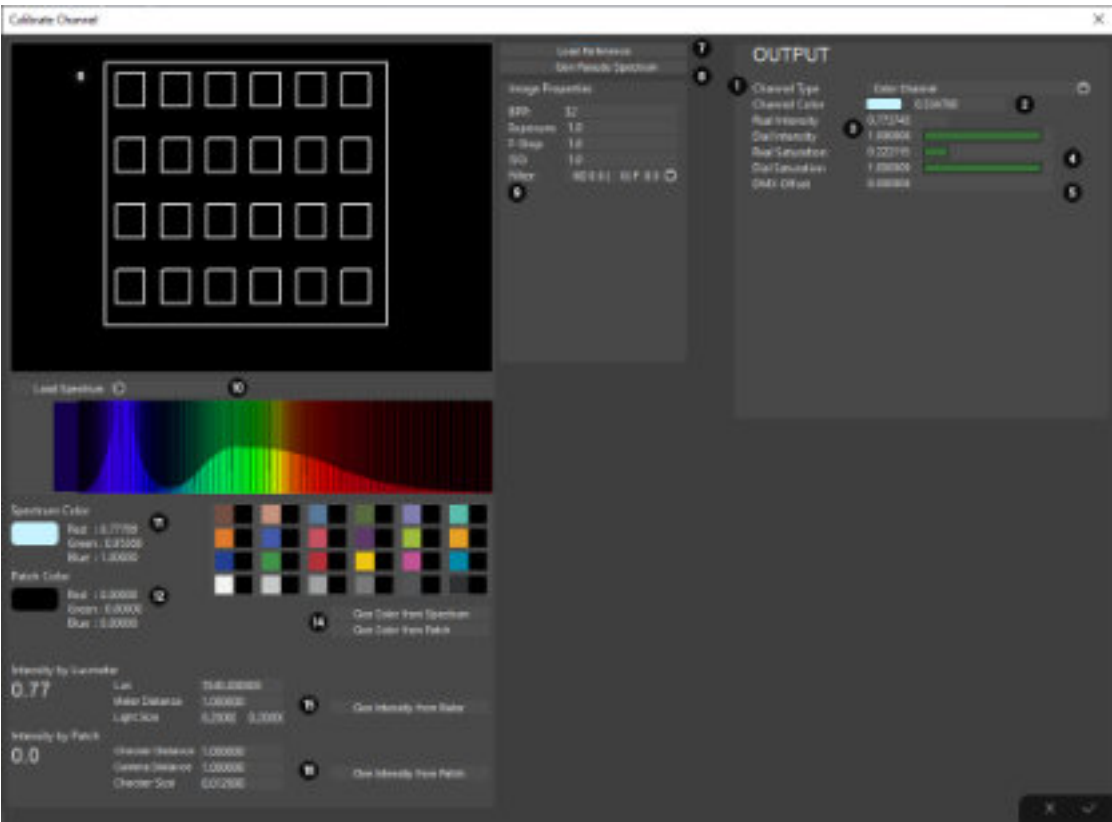
Load Reference
Loads an image to be displayed in 6. This is for the calibration by photo method, and is highly experimental.
- 8

Gen Pseudo Spectrum
Generates a pseudo Spectrum on basis of the illumination of the loaded image. Does not work properly and is subject to change so for now keep your images for future evaluation (you can put them in your sIBL folder)
- 9

Image Settings
Loaded automatically by exif data, or can be edited. These are used for the intensity calculation
- 10

Spectrum / Spectrum Import
Displays the spectrum of the channel, You can also import a spectrum. it currently support csv files from Sectragryph, Theremino and from US Language based Sekonics (If the reference file I found is ok) and bmp images from lower end Sekonics. If you encounter problems, just send a file to me. Spectrum is stored in the sIBLfile.

The Calibration Dialog



- 11

Spectrum Color
The color evaluated by the spectrum, subject to change to support other whitepoints
- 12

Patch Color
The evaluated color of the 18% patch. Very simple algorithm for now subject to change
- 13

TO be added in future
- 14

Gen Color by Spectrum / Patch
Copies the value to the color value output.
- 15

Intensity by Luxmeter:
Tries to get radiance values from the measured luxmeter values. Light Size is the same as the light size you provide in the main panel.
Meter Distance is the distance between the luxmeter and the light. This will be stored in the sIBLfile for future enhancements
- 16

Intensity by Patch

Camera Distance is the distance from the camera to the color checker. Checker Distance is the distance from the light to the checker.
And checker size is the actual size of the checker.

sIBL format changes

Although sIBL does cover a lot of the needed modifications some slight alterations and enhancements had to be made. The tables below lists all sIBL header and Lightsmith tags used by the current sIBLlight and Siblstage, including the new changes

Some changes to the general image handling in sIBL has been also made which might cover future usage scenarios of it But those will be make public in a separate document in the coming months.

HEADER (sIBLlight text field / sIBL file definition)	For what it is good for
Icon	Path to an Icon image 128x128 in size
ICOfile	
Name	The name of the sIBL file
Name	
Preview File	Path to an preview image usually 600x300 jpeg
PREVIEWfile	
Author	Name of the creator of the set
Author	
Location	Location of the set
Location	
Comment	General comment
Comment	
Link	Link to webpage / additional information
Link	
Date	Date the set was shot
Date	
Time	Time the set was shot
Time	
North	The general north shift of the panorama. EG Where the camera points to
North	
Height	The height of the icon file
Height	
Ground	The ground level. In panos its the height to the pano head.
Ground	
Not in sIBLlight	NEW; LMultiply is used to store the factor to which each element of a sIBLfile is multiplied with
LMultiply	
Not in sIBLlight	NEW; LGamma is used to store the gamma factor which is applied to each element of a sIBLfile
LGamma	
Not in sIBLlight	NEW; LSaturation is used to store the saturation factor which is applied to each element of a sIBLfile
LSaturation	
Version	NEW: General purpose version number for processing sIBLfiles. (This makes future modifications to the file format easier
Version	

Lightsmith Definition (sIBLlight text field / sIBL file defintion)	For what it is good for
[Lightsmith]	Start tag for a lightsmith definition
LS Name LSname	Name of the Lightsmith
Image File LSfile	Path to the hdri representing the light
Mask File LSmaskfile	Path to an alpha mask
Width LSwidth	Width of the hdri image file in meter
Height LSheight	Height of the hdri image file in meter
AreaWidth LSareawidth	Width of the area light in meter
AreaHeight LSareaheight	Height of the area light in meter
Light Color LScolor	The color of the area light. NEW: This value is now floating point
Not in sIBLlight LSmulti	NEW Multiplication factor for the light
Not in sIBLlight LSgamma	NEW Gamma correction factor for the light
Not in sIBLlight LSsaturation	NEW Saturation correction factor for the light
Camera Kelvin LSkelvin	NEW The white balance factor used to shoot the hdri
Not in sIBLlight LSdistance	NEW; The distance the light has to the centre of the panorama
Not in sIBLlight LSu	NEW; The U coordinate of the light on the environment map
Not in sIBLlight LSv	NEW; The V coordinate of the light on the environment map
Version LSv	NEW: Internal use currently
Object file LSobjectfile	The object file used to map the hdri onto NEW: Importers should cap the object descriptor an check for a native file for the DCC its working in first in that directory before falling back to the obj
Object Frame LSframefile	The frame file used as representation for the rest of the lamp body NEW: Importers should cap the object descriptor an check for a native file for the DCC its working in first in that directory before falling back to the obj
Frame Color LSframecolor	The color of the light body
Scale LSscale	Scale factor of the light
Shape LSshape	Shape of the area light
Light Type LStype	0 = Not defined 1 = Mono colored lights 2 = Bicolored lights 3 = RGB / RGBW channel controlled lights 4 = HSV controlled lights
Burntime LSburntime	The time your light has been on before measurement
Measure Distance LSmesdist	The distance from the light to the light meter
Camera Kelvin LScamkelvin	The Camera White point value used when shooting the hdri image
DMX Base LSdmxbase	The base DMX address, all channel addresses will be added to this value
DMX Offset LSdmxoffset	How many DMX addresses should be reserved before adding consecutive lights Currently unused.
Not in sIBLlight LSdmxmultiply	Multiplication factor for the dmx channel. Internal use in sIBLstage

Each Lightsmith can have multiple measurement (=channel) definitions and multiple whitepoint definitions
These will be listed on the next page

Measurement Definition (sIBLlight text field / sIBL file definition)	For what it is good for
[Measurement]	Initial Measurement / Channel tag
Name MSname	Name of the Channel: Red/Green/Amber/Hue/ This is for clarification to the user only
Type MStype	What type of channel is it. This is for the internal color engine, and what data to display in sIBLlight.
Color MSColor XXX,YYY	Color of the channel in hue Two values The first is the dialled color (eg red)0.0 while the second is the measured color. (0.02)
Saturation MSSaturation XXX,YYY	Saturaton of the channel Again dialled and measured values. Currently this value is used to exclude lights channels with no hue information (white led)
Intensity MSIntensity XXX,YYY	The dialled and measured intensity of a light. This is used to correlate the hdri with the light output. dialled intensity is currently not in use
DMX CHannel MSdmxChannel	The DMX channel value added to the base gives the actual channel dmx which the controller sends to the light
Lux MSLux	The measured Lux output measured by a luxmeter spectrometer Stored for future enhancements
Distance MSDist	The distance from the luxmeter to the light Stored for future enhancements
DMX Correction (sIBLstage only) MSdmxcorrection	A correction value which is added / subtracted from the DMX value calculated
Spectrum MSspectrum XXX,YYY	Spectrum definitions is a pair of wavelength and intensity. The spread / amount of values is undefined.

White Point Definition (sIBLlight text field / sIBL file defintion)	For what it is good for
[WP]	Initial White Point tag
WPname WPname	The name of the white point
WP Kelvin WPKelvin	The Kelvin value of the white point
WP Camera WPCamera	The camera model used for the whitepoint
WP Lut WPLUT	The LUT used to calibrate the whitepoint
WPChannel XXX,YYY	All channels which affect the whitepoint have the channel number and its intensity listed

There other changes to the sIBL file format, but these are subject to change and will be released in another document

Contact

For questions and suggestions use the
info@splotchdog.com email address.

I setup a forum thread also on the splotchdog forum site

Again future development depends on your input